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Memo

To: Jane Whitsett, Pebble Limited Partnership Date: May 21, 2009

cc: From: Claire Linklater

Stephen Day

Subject: Status of Kinetic Test Program and Proposed Project #:

Modifications

1CN007.000

Pebble Project

DRAFT

1 Executive Summary

Development of the Pebble Deposit could involve excavation of waste rock showing a range of potential for metal leaching (ML) and acid rock drainage (ARD). The mineralized rock associated with the ore body is generally classified as potentially ARD generating whereas overlying rocks deposited after the mineralizing event are generally classified as having low potential for ARD but with some "metal" leaching considerations.

Two types of tailings would be produced by processing Pebble Project ores. The major tailings stream would have low potential for ARD due to relatively low sulfide content. A second smaller stream is classified as potentially ARD generating due to its elevated sulfide content.

To evaluate actual leaching, an extensive kinetic test program was implemented in 2005 on rock and tailings samples. As the overall project has evolved, additional tests have been started on waste rock and tailings. In total, 68 rock and 18 tailings samples have been, or continue to be tested (some for more than 4 years).

Based on recent review of the data obtained, modifications to the test program are being proposed to recognize that some tests have satisfied their objectives by yielding stable leachate chemistry under non-acidic or acidic conditions. In these tests, the leachate chemistry is not expected to change for several years. The data can be used to develop geochemical criteria for waste management and to predict water quality.

The following table summarizes the overall program and the proposed modification to the program to allow for tests for which the objectives have been met and the test can be completed.

Test Material	Total Number of Tests	Tests Already Completed	Test Proposed to be Completed	Proposed Ongoing Tests
Rock	74	23	23	28
Tailings	20	2	7	11

For ongoing tests, it is proposed to reduce monitoring frequency because long term trends can be defined by less frequent analysis of leachates. Most parameters would be reduced from analysis every other week to analysis every fourth week.



2 Introduction

2.1 Background

To support mine planning for the Pebble Project, a detailed environmental geochemical characterization program is ongoing focused on materials that may constitute wastes generated by the mine.

The aims of the program are to:

- Geochemically characterize materials that could be produced during mining and milling and determine their likely geochemical behavior following disturbance by mining activities;
- Provide data that can be used to make decisions about waste management approaches; and
- Obtain information that can be used to estimate the chemistry of water in contact with these
 materials.

The program commenced in 2004 and since then a large body of data have been obtained. Although a large proportion of the planned testwork is complete, a number of longer term kinetic weathering tests are ongoing (humidity cells, subaqueous columns and field barrel tests).

Kinetic tests provide specific data to answer the questions of whether rock/tailings could generate acid rock drainage (ARD) (depending on how the material is managed), when ARD would be generated, and how rates of leaching are related to factors such as mineralogy, sulfur, metal content, leachate chemistry and disposal conditions. Each test provides information on these aspects and is usually continued until the test results no longer add significant new information to the understanding of the metal leaching and ARD (ML/ARD) aspects of the project.

Thorough review of the test data has occurred at various times and decisions made to finish or continue tests as a result of trends in leachate chemistry. The duration of tests at completion is determined by the timing of these reviews and the date the tests started. There is no correlation of the actual termination date with short term effects observed in leachate chemistry trends.

The kinetic testwork program includes both laboratory and field tests. This memorandum describes:

- the status of the laboratory-based component of the kinetic testwork program at the current time and makes recommendations for completion of a number of the tests; and
- proposes reduction in monitoring frequency.

The program includes study of waste rock and tailings and these are discussed in turn in the later sections.

2.2 Geological Terminology and Overall Geochemical Characteristics

The geological setting will not be described in detail here. The main geological features of the Pebble Deposit are (1) porphyry mineralized Cretaceous (Pre-Tertiary) age sedimentary and intrusive rocks containing the copper, gold and molybdenum mineralization; and (2) overlying Tertiary age sedimentary, volcano-sedimentary and sedimentary rocks deposited on the eroded Cretaceous rocks. The Tertiary rocks do not contain porphyry mineralization though are locally mineralized with iron sulfides.

Static geochemical characterization to date has determined that the Pre-Tertiary rocks have potential to generate ARD if not managed appropriately. In contrast, the Tertiary rocks have low potential for ARD due to generally low levels of iron sulfide minerals and relatively abundant acid neutralizing carbonate minerals.

The porphyry- mineralized pre-Tertiary rocks are described as being part of the West and East Zones which are distinctive mineralizing centers. The West Zone was discovered and tested first. The overlying Tertiary rocks are also assigned to the same zones but are continuous and unrelated to the pre-Tertiary zones. The geochemical characteristics for the zones are not significantly different in the context of the overall objectives of the geochemical characterization program.

2.3 Supporting Documents

The design of the geochemical characterization program for the Pebble Project has been described in several previous document the most comprehensive of which is "Pebble Project – Metal Leaching/Acid Rock Drainage Characterization - DRAFT Sampling and Analysis Plan" (June 2005).

The memorandum "Status of Kinetic Tests - Pebble Project" (November 22, 2006) (SRK 2006) previously described the status of the testwork and was provided to ADNR. Summaries of the kinetic test program have been provided as part of annual meetings with State of Alaska and Federal agency staff.

3 Waste Rock Samples

3.1 Introduction

The laboratory program includes both humidity cell tests and subaqueous columns to examine reaction kinetics under unsaturated conditions and under flooded conditions, respectively. The overall number of tests in program classified according to age (Tertiary and Pre-Tertiary), rock type (plutonic, sedimentary, volcanic) and zone (West and East) are summarized in Figures 1 and 2.

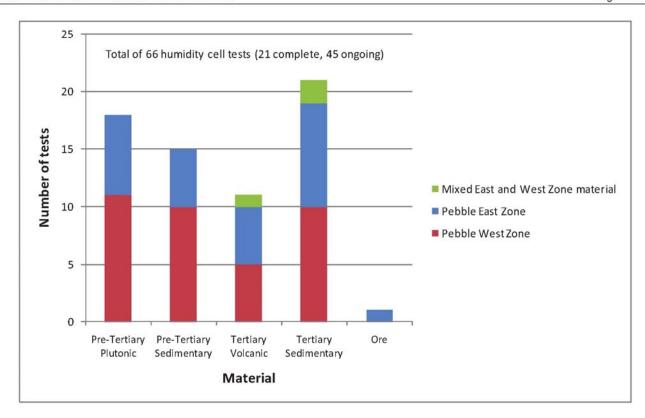


Figure 1: Summary of Number of Rock Humidity Cells

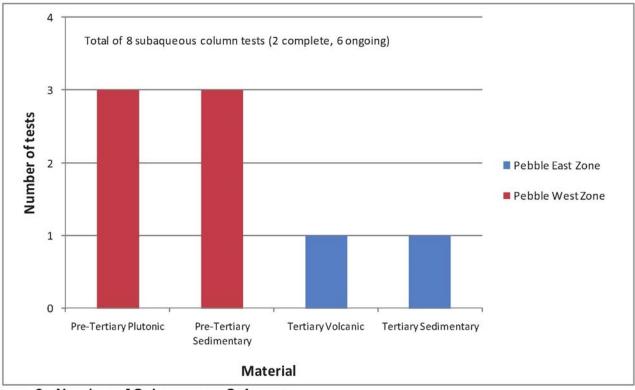


Figure 2: Number of Subaqueous Columns

3.2 Humidity Cells

Tables 1 to 3 summarize characteristics of the samples used in each test, and give information about the status of each test. Also given in the tables are recommendations to complete those tests that are showing stable trends and are not expected to yield new information on a reasonable laboratory timescale. The following sections describe briefly selected outcomes of the testwork, and give justifications for recommended changes to the program.

3.2.1 Pebble West Zone: Pre-Tertiary

As summarized in Section 1.2, Pre-Tertiary rock generally has the potential to generate ARD. However, the rock contains a range of neutralization potentials (NP) resulting in the delay to appearance of ARD spanning decades. Samples for testing were deliberately selected to evaluate both the development of acidic conditions and leaching effects under non-acidic conditions.

Two categories of rock are being characterized:

- Volcano-sedimentary Eight samples of wacke (W) and mudstone/siltstone (Y) were tested. Seven
 tests were completed in 2005 (as described by SRK 2006) because they had either generated acid or
 were not expected to generate acid for many years. One test (Sample 3124-0188-0209) is ongoing
 (over 4 years of testing). Graphs showing results are provided in Attachment A.
- Plutonic Nine samples of plutonic igneous rocks were tested. Eight tests were completed in 2005 (SRK 2006) for the same reason indicated above. One test (Sample 3069-0927-0947) is ongoing (over 4 years of testing). Graphs showing results are provided in Attachment B.

The two ongoing samples are showing stable leachate chemistry under acidic conditions.

The objectives of these tests have been met. They have demonstrated that samples with relatively low NP (<10 kg CaCO₃/t) have the potential to generate acid, either immediately, or following relatively short test durations. Samples with higher NP produced pH neutral leachate. Rates of oxidation have been shown to correlate with sulfur content of the rocks. Stable metal release rates have now been collected for a range of pH conditions, sample types and bulk chemistries.

It is proposed that the two ongoing tests are continued to provide long-term data under acidic conditions for one sample from each rock type category.

3.2.2 Pebble West Zone: Tertiary

Nine Pebble West Zone Tertiary rock samples have been or continue to be tested, with two samples being tested as triplicates to assess reproducibility of results (total of 13 tests). Of these thirteen tests, six have already been completed (as described in SRK 2006) and seven are ongoing now for over 3 years. Graphs showing results are provided in Attachment C.

The majority of Tertiary rock types are not expected to generate acid. A very small component contains elevated pyrite concentrations and may generate acid. Two samples in this category are being tested. The program is designed primarily to assess element leaching under non-acidic conditions and relationships between sulfide content and element leaching.

Most samples now show stable leachate chemistry enabling leaching rates to be compared to bulk rock characteristics. Therefore, the objectives of the tests have been met. All samples have generated

leachates that were pH neutral or slightly alkaline. Release rates for the majority of parameters are either stable or gradually decreasing with time. The exceptions are:

- Sample 4157 439-471 (sedimentary rock type, TF). This sample has AP of 117 kg CaCO₃/t compared to typical values an order of magnitude lower and consequently elevated sulfate release compared to other samples. The leachate pH remains neutral because the sample has significant NP. The sulfate release rate appears to be increasing very gradually over time. The fluorine release rate for this sample is also rising.
- Sample 4292 415-430 (volcanic rock type, TA/TD) The fluorine release rate for this sample is rising.

Both these samples have NP/AP less than 1 indicating a possibility that acid conditions could develop over the very long term (6 to 11 years based on the current rates of depletion of NP). It is proposed that these two tests remain in place to allow fluorine and sulphate release rates to stabilize. They also provide a possible opportunity to observe acidic conditions for Tertiary waste rock, should such conditions arise.

All other samples studies have lower ARD potential based NP/APs mostly well above 1 and also have lower APs. Acidic conditions are not expected to develop. It is proposed that all ongoing tests in this category be completed after being tested for 3 to 4 years. These tests are:

- Sample 115-0142-0163 (sedimentary rock type, TC) This sample was tested in triplicate. Reproducibility of the triplicate was very good. Given that reproducibility has been demonstrated and the leachate chemistry is stable the objectives of the tests have been met.
- Sample 4292 685-695 (sedimentary rock type, TC) The leachate chemistry is stable.
- 3102-0958-0978 (volcanic rock type, TB) The leachate chemistry is stable.

3.2.3 Pebble East Zone: Pre-Tertiary

As was the case with the Pebble West zone samples, the same two categories of rock are being characterized:

- Volcano-sedimentary Five samples are being characterized, all from the most abundant lithology, meta-mudstone (Y). Graphs showing results are provided in Attachment D.
- Plutonic Seven samples are being tested, six from the volumetrically abundant granodiorite lithology, and one diorite sample. Graphs showing results are provided in Attachment E.

The samples are showing similar trends to those shown by the Pebble West Zone samples. For example, samples with relatively low NP (less than 10 kg CaCO₃/t) have been demonstrated to generate acid, either immediately, or following relatively short test durations. Samples with higher NP are associated with neutral pH leachate.

After detailed examination of the trends that have developed, it is proposed that the following five tests be completed after over a year of testing:

Volcano-sedimentary samples

- Sample 406717 Acidic conditions have developed in this test as would be expected on the basis of the NP/AP. The leachate chemistry for this sample is stable and so the objective of the test has been met.
- Sample 107326 This sample is showing trends very similar to Sample 107172 (neutral pH leachate, rising Mo release rates). It is proposed that this test be completed, while the test involving the comparable Sample 107172 is continued.

Plutonic samples

- Sample 224182 Mildly acidic conditions have developed in this test as would be expected on the
 basis of the NP/AP ratio. The leachate chemistry for this sample is stable and so the objective of the
 test has been met.
- Sample 226293 The sample has NP/AP>1 and is giving pH neutral leachate as expected. Most
 metal release rates are stable, although Mo release is decreasing gradually, and Sn release is
 increasing. Sample 224956 is showing very similar trends. It is proposed that the test involving
 Sample 226293 be terminated, whilst the test involving Sample 224956 continue.
- Sample 105456 Acidic conditions have developed in this test as would be expected on the basis of the limited NP, and NP/AP<1. The leachate chemistry for this sample is stable and so the objective of the test has been met.

Seven tests will continue because leachate chemistry under non-acidic and acidic conditions has not stabilized.

3.2.4 Pebble East Zone: Tertiary

Thirteen Pebble East Zone samples are being tested. Graphs showing results are provided in Attachment F. As was the case with the Pebble West zone samples, the majority of these samples were not expected to generate acid. Most tests now show stable leachate chemistry; therefore, the objectives of the tests have been met. All samples have generated leachates that were pH neutral or slightly alkaline as expected from their bulk characteristics. Release rates for the majority of parameters are either stable or gradually decreasing with time.

It is proposed that most of these tests be completed following over a year of testing as the objectives of the tests have been met. Exceptions are the following tests, which should continue:

- Samples 220366 and Sample 221502 These tests were started in November 2008 to provide additional coverage of the range of NP/AP in the Tertiary rocks types. The leachate chemistry does not yet appear to have stabilized and pHs are below 6.
- Sample 104772 The leachate pH is near 5 and slightly below the pH of deioinized water in the test.
 The pH is gradually decreasing with time and accompanied by coincident increase in metal release rates. This sample shows the highest release rates for some metals, e.g. Cd, Cu and Zn.

3.2.5 Barrel Tests Samples

Ten samples (four Pre-Tertiary and six Tertiary) are being characterized in field (barrel) tests and equivalent humidity cell tests. They provide an opportunity to obtain data in the laboratory program that

can be compared directly with data collected from the field tests. Graphs showing results are provided in Attachment G.

Although most of the release trends for these tests appear largely stable, it is proposed that these tests continue, principally due to their value in terms of comparisons with the data derived from the field tests.

3.2.6 Ore Composite

One sample of an ore composite is being studied. Graphs showing results are provided in Attachment H. The test has been running for just over a year and is yielding pH neutral leachate. Based on the NP of 6.9 kg CaCO₃/t, it is expected that acid conditions would develop over time. Some metal release rates are showing gradual increases over time, e.g. Cd, Cu and Zn. It is proposed this test continue to determine if acid conditions will develop, and allow the metal release rates to stabilize.

3.3 Subaqueous Columns

These tests are intended to simulate weathering of rock in subaqueous rather than aerated conditions as would occur when waste rock or mine surfaces are flooded. Table 4 summarizes characteristics of the samples used in each test, and gives information about the status of each test. Also given in the table are recommendations to terminate those tests that are showing stable trends and are not expected to yield new information on a reasonable laboratory timescale. The following sections describe selected outcomes of the testwork, and give justifications for recommendations that have been made.

It should be noted that a further 12 samples are currently being stored under aerated, humid conditions ('stored bag' tests). This storage regime is intended to encourage sulphide oxidation and weathering, to represent exposure of waste rock to aerial conditions prior to submergence for long term storage. The long term intention is for a subset of these 'weathered' samples to be studied in subaqueous columns. These columns will be included in proposals for the 2010 program of work.

3.3.1 Pebble West Zone

Six Pre-Tertiary samples are being characterized covering a range of rock types (volcano-sedimentary and plutonic). Of these six tests, two were completed in 2006 (SRK 2006). Graphs showing results are provided in Attachment I.

Of the four ongoing tests, the following comments can be made:

- Sample 3069-0927-0947 The leachate chemistry shows some variability in pH and sulphate
 release and the release rate for several elements are showing increases over time, e.g. As, Sb and to a
 lesser extent Cu and Zn. It is proposed that this test be continued.
- Sample 3102-0568-0588 The leachate chemistry appears stable. A very gradual increase in sulphate release rate is observed after 600 days which is correlated with an increase in the redox potential. It is proposed that this test be completed.
- Sample 3124-0188-0209 This sample shows trends similar to Sample 3069-0927-0947, although
 the metal release rates appear more stable. It is recommended that this test be completed.
- Sample 3124-0872-0887 This sample shows stable leachate chemistry. It is proposed this test be completed.



3.3.2 Pebble East Zone

Two Tertiary samples are being studied, one each of sedimentary and volcanic rock types. Graphs showing results are provided in Attachment J. These tests have been running less than a year, and the leachate chemistry has not yet stabilized. It is proposed that both tests continue.

4 Tailings Samples

4.1 Metallurgical Process Background and Geochemical Characteristics

Several phases of metallurgical testwork have been performed for Pebble Project since 2005 resulting in generation of tailings products for geochemical testing.

The proposed metallurgical process would use flotation to separate commodity sulfide minerals from the ore. Separation would occur in two stages. The first stage would float both waste and commodity sulfide minerals to a bulk sulfide concentrate resulting in a low sulfide bulk or rougher tailings product. The second stage floats commodity sulfide minerals (chalcopyrite and molybdenite) from the bulk concentrate leaving pyrite tailings. To date, testwork has focused on characterizing the bulk tailings products while gold recovery from the pyrite tailings has been evaluated.

Kinetic testing has used two sets of tailings products from metallurgical testwork in 2005 and 2008. The 2005 program used West Zone ore and was performed at the bench scale. In 2008, the metallurgical program evaluated recovery of metals from West and East Zone ore composites in a pilot plant. Processing of East Zone ores also considered rock type as a variable. In addition, the ability to generate tailings sand using cyclones was evaluated. All types of samples are being characterized in geochemical testwork

Static geochemical testwork has consistently shown that the bulk tailings product should have low sulfur content (0.1%) and sufficient NP to result in bulk tailings that have low potential for ARD. A significant difference between the zones is that NP in the East Zone is lower than West Zone

The tailings kinetic testwork program comprises mainly humidity cell tests. In addition, two column tests were undertaken using the 2005 tailings samples. The number of tests included in the program is summarized in Figure 3.

Table 5 summarizes characteristics of the samples used in each test, and gives information about the status of each test. Also given in the table are recommendations to terminate those tests that are showing stable trends and are not expected to yield new information on a reasonable laboratory timescale. The following sections describe briefly selected outcomes of the testwork, and give justifications for recommendations that have been made.



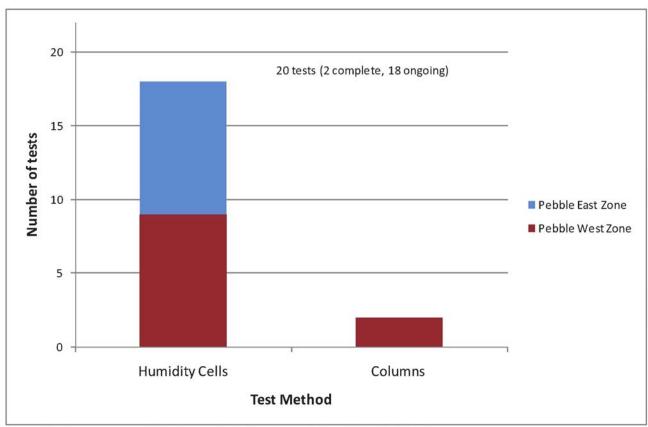


Figure 3: Summary of Tests undertaken involving Pebble Tailings

4.2 Humidity Cells

4.2.1 2005 West Zone Samples

Two samples of two types of tailings (total four samples) were provided for geochemical characterization, both tailings types are components of the bulk tailings stream. Two of the tests were completed in 2005 and two tests have been continuing for over 4 years. Graphs showing results are provided in Attachment K.

The two continuing tests are showing stable leachate chemistry. Leachate is pH neutral and release rates either remain constant or are decreasing very gradually. It is proposed that the two remaining tests be completed because the objective of the testwork has been met.

4.2.2 2008 Samples

Fourteen samples are currently being characterized (Table 5). These can be grouped as follows:

- East Zone individual rock type composites for metasediments (Y) and intrusive (G) tested as bulk tailings, and separated sands and slimes products produced by cycloning.
- East Zone combined rock type composite (80% G and 20% Y) similarly tested as bulk, sands and slimes.

 West Zone single rock type composite (termed H for hypogene) tested as two components of the bulk tailings (cleaner and scavenger tailings) and pyrite rougher tailings from initial cleaning of the bulk sulfide concentrate. The pyrite rougher tailings are not the final pyrite tailings.

Graphs showing results are provided in Attachment L. Overall interpretation of the test data (including the 2005 tests) shows that predictable relationships exist between sulfur content and particle size after leachate chemistry stabilizes, which generally occurs less than a year into testing. For a given tailings particle size product (bulk, sands or slimes), oxidation rates are correlated with sulfur content. For a given tailings composite, oxidation rates are negatively correlated with particle size. That is, under laboratory conditions, as particle size decreases oxidation rates increases. This latter finding is consistent with oxidation as a surface area phenomenon.

Eight of the tests (East Zone Rock Type Composite and West Zone Composite) have been running for less than a year. The leachate chemistry has not yet stablized and it is proposed that these tests be continued.

The six other tests (PP08 series samples) have been running for a year and generally show stable leachate chemistry correlated with bulk characteristics. Leachate is pH neutral and release rates either remain constant or are decreasing very gradually. It is proposed that four of the tests be completed.

It is proposed that the two tests involving cyclone sands (PP08-3850 and PP08-3849) be continued due to their potential importance as a component of tailings beaches and a construction material should the project proceed with use of cyclone sands for dam building.

The proposed ongoing test program consists of:

- East and West Zone rock type composite bulk, sands and slimes tailings samples.
- Two additional sands samples for individual rock types from the East Zone.

4.2.3 2005 Tailings Samples Columns

Two of the scavenger tails samples were studied. Both tests are ongoing. Graphs showing results are provided in Attachment M.

The tests have been running for more than 4 years and the leachate chemistry is generally stable. However, in the case of Sample S2-Scavenger Tails, the Mo release started to increase at around 900 days, and continues to rise. It is recommended that this test be continued to evaluate the trend in molybdenum release rates. It is proposed that the S1-Scavenger Tails column be terminated.

5 Proposed Changes to Monitoring Frequency

As testwork continues, less frequent monitoring results are needed to discern trends in leachate chemistry. Table 6 provides proposes changes to the leachate analysis for all tests proposed for continuation.



SRK Consulting 1CN007.000 Pebble Geochemical Characterization

Table 1: Characteristics and Status of Pebble West Zone Waste Rock Samples in Humidity Cell Tests

	Sample ID	Rock Type	Date Started	Last data	Duration	ď	AP	NP/AP	Recent Leachate pH	Calculated Time to onset of acid conditions ⁽¹⁾	Status and Recommendation	Reasons for Previous Decision or Proposed Change
D OB-Feb-05 OA-Aug-05 O.					Years	kg CaCO ₃ /t	kg CaCO ₃ /t			Years		
D OB Feb-05 30-Aug-05 0.6 9.8 105.3 0.09 pH < 5 . Completed R OB Feb-05 30-Aug-05 0.6 6.1 53.4 0.11 5-GpHe6 . Completed X OB Feb-05 30-Aug-05 0.6 5.6 91.6 0.09 pH neutral 6 Completed X OB Feb-05 30-Aug-05 0.6 5.6 91.6 0.09 pH neutral 6 Completed N OB Feb-05 31-Aug-05 0.6 5.6 98.1 1.03 pH neutral 6 Completed N OB Feb-05 10-Sep-06 0.6 3.2 7.6 0.04 pH neutral 5 Completed N OB Feb-05 37-Aug-05 0.6 3.2 0.04 pH neutral 1.0 Completed N OB Feb-05 37-Aug-05 0.6 3.0 3.0 3.0 pH neutral 1.0 Completed Y OB Feb-05 <td>Pre-Tertiary Plutor</td> <td>nic Rock</td> <td></td>	Pre-Tertiary Plutor	nic Rock										
N OB-Feb-DG 30-Aug-DG 0.6 6.1 53.4 0.11 5-6H-dG . Completed X OB-Feb-DG 30-Aug-DG 0.6 6.1 5.6 9.16 0.11 pH neutral 6 Completed N OB-Feb-DG 31-Aug-DG 0.6 5.6 9.81 0.10 pH neutral 5 Completed N OB-Feb-DG 31-Aug-DG 0.6 5.6 9.81 0.10 pH neutral 5 Completed D 10-Feb-DG Organia 2.2 3.2 0.04 5-6 9.81 0.01 pH neutral 5 Completed NWT OB-Feb-DG 30-Aug-DG 0.6 7.2 1.0 pH neutral 2.5 Completed WY OB-Feb-DG 31-Aug-DG 0.6 7.5 0.04 5-6 9.7 0.04 5-6 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00<	025-0617-0637	0	08-Feb-05	30-Aug-05	9.0	9.8	105.3	0.09	pH < 5		Completed	Stable leachate chemistry under acidic conditions
GC GB-Feb-GS 30-Aug-GS GG 8.0 45.0 0.16 ph neutral B Completed N 08-Feb-GS 30-Aug-GS 0.6 5.6 91.6 0.06 ph neutral 5 Completed N 08-Feb-GS 31-Aug-GS 0.6 5.6 5.0 ph neutral 5 Completed G 09-Feb-GS 31-Aug-GS 0.6 4.2 3.7 ph neutral 2.9 Completed D 10-Feb-GS 29-Iun-GS 1.4 4.5 4.4 1.03 ph neutral 2.9 Completed NV 08-Feb-GS 29-Iun-GS 1.4 4.5 4.4 1.0 ph neutral 2.9 Completed NV 08-Feb-GS 30-Aug-GS 0.6 3.2 6.4 1.3 ph neutral 1.0 Completed NV 08-Feb-GS 30-Aug-GS 0.6 3.2 0.0 ph neutral 1.0 Completed V 08-Feb-GS 31-Aug-GS	046-0113-0133	z	08-Feb-05	30-Aug-05	9.0	6.1	53.4	0.11	9>Hd>9		Completed	Stable leachate chemistry under acidic conditions
X 09-Feb-05 30-Aug-05 0.6 5.6 91.6 0.06 pH neutral 6 Completed N 09-Feb-05 31-Aug-05 0.6 5.6 91.6 0.06 pH neutral 5 Completed G 09-Feb-05 31-Aug-05 0.6 37.5 36.6 9.16 0.04 pH < 5	046-0580-0600	9	08-Feb-05	30-Aug-05	9.0	8.0	45.0	0.18	pH neutral	8	Completed	Stable leachate chemistry. Not expected to generate acid in short term
NA 09-Feb-05 31-Aug-05 0.6 5.6 58.1 0.10 pH neutral 5 Completed M 09-Feb-05 31-Aug-05 0.6 37.5 36.6 1.03 pH neutral 5.4 Completed D 10-Feb-05 0.15-Sep-05 0.6 4.18 152.5 0.24 pH neutral 2.5 Completed NV 0.6-Feb-05 21-Aug-05 0.6 0.4 4.18 1.52.5 0.24 pH neutral 2.5 Completed WY 0.6-Feb-05 27-Aug-05 0.6 0.4 1.2.5 0.04 pH neutral 2.4 Completed WY 0.6-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 1.0 Completed WY 0.6-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 1.0 Completed Y 0.6-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 1.0	112-0460-0480	×	08-Feb-05	30-Aug-05	9.0	5.6	91.6	90.0	pH neutral	9	Completed	Stable leachate chemistry. Not expected to generate acid in short term
MM O9 Feb-05 31-Aug-05 0.6 37.5 36.6 1.03 pH entral 2.4 Completed G O 10 Feb-05 0.0 4.18 4.2 3.2 76.3 0.04 pH + 55 - Completed AX 10 Feb-05 0.0 1.4 4.5.5 4.4.4 1.03 pH neutral 2.5 Completed AX 10 Feb-05 29-Jun-05 0.6 4.1.8 4.5.5 4.4.4 1.03 pH neutral 2.5 Completed WY 0.6 Feb-05 30-Aug-05 0.6 26.5 88.4 0.39 pH neutral 5 Completed WY 0.6 Feb-05 31-Aug-05 0.6 18.5 97.8 0.03 pH neutral 10 Completed Y 0.6 Feb-05 31-Aug-05 0.6 18.5 97.8 0.03 pH neutral 10 Completed Y 0.9 Feb-05 31-Aug-05 0.6 18.5 97.8 0.03 pH neutral	117-0190-0210	z	09-Feb-05	31-Aug-05	9.0	5.6	58.1		pH neutral	5	Completed	Stable leachate chemistry. Not expected to generate acid in short term
GG OB-Feb-05 Ongoing 4.2 3.2 7.6.3 0.04 PH+5 - Completed X 10-Feb-05 2-Jun-06 1.4 4.5.5 16.2.5 0.27 pH neutral 3.9 Completed AX 10-Feb-05 2-Jun-06 1.4 4.5.5 10.4 5.9 Completed WY 08-Feb-05 30-Aug-05 0.6 2.6.5 6.8.4 0.39 pH neutral 2.4 Completed WY 08-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 1.0 Completed WY 08-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 1.0 Completed Y 09-Feb-05 31-Aug-05 0.6 30.8 92.5 0.33 pH neutral 1.0 Completed Y 10-Feb-05 31-Aug-05 0.6 32.6 77.5 0.0 pH neutral 1.0 Completed Y 10-Feb-05	118-0468-0488	Σ	09-Feb-05	31-Aug-05	9.0	37.5	36.6		pH neutral	24	Completed	Stable leachate chemistry. Not expected to generate acid in short term
D 10-Feb-OS 0.6 41.8 152.5 0.27 pH neutral 39 Completed ann-Sedimentary Rock 10-Feb-OS 29-Jun-O6 1.4 45.5 44.4 1.03 pH neutral 25 Completed WY 08-Feb-OS 30-Aug-OS 0.6 0.4 12.5 0.04 5 <ph-66< td=""> . Completed Y 08-Feb-OS 30-Aug-OS 0.6 25.5 68.4 0.39 pH neutral 1.0 Completed Y 08-Feb-OS 31-Aug-OS 0.6 32.6 77.5 0.02 pH neutral 1.0 Completed Y 09-Feb-OS 31-Aug-OS 0.6 32.6 77.5 0.02 pH neutral 1.0 Completed Y 09-Feb-OS 31-Aug-OS 0.6 32.6 77.5 0.02 pH neutral 1.0 Completed Y 10-Feb-OS 31-Aug-OS 0.6 32.6 3.7 3.7 3.4 pH neutral 1.0 0.00</ph-66<>	3069-0927-0947	9	09-Feb-05	Ongoing	4.2	3.2	76.3	0.04	pH < 5	,	Continue	Will provide long-term data for this rock category
X 10-Feb-05 29-Jun-06 1.4 45.5 44.4 1.03 pH neutral 25 Completed NVY 08-Feb-05 30-Aug-05 0.6 26.5 68.4 0.39 pH neutral 24 Completed Y 08-Feb-05 30-Aug-05 0.6 26.5 68.4 0.39 pH neutral 24 Completed Y 08-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 10 Completed Y 08-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 10 Completed Y 08-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 11 Completed Y 08-Feb-05 31-Aug-05 0.6 18.5 97.8 0.42 pH neutral 11 Completed Y 08-Feb-05 31-Aug-05 0.6 18.5 97.8 0.42 pH neutral 10 Completed	3123-0438-0458	٥	10-Feb-05	01-Sep-05	9.0	41.8	152.5	-	pH neutral	39	Completed	Stable leachate chemistry. Not expected to generate acid in short term
WY 08-Feb-05 30-Aug-05 0.6 0.4 12.5 0.04 5-pH-66 - Completed WY 08-Feb-05 37-Jun-06 1.4 6.1 10.3 pH neutral 5 Completed WY 08-Feb-05 37-Jun-06 1.4 6.1 10.3 pH neutral 5 Completed Y 09-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 10 Completed Y 09-Feb-05 31-Aug-05 0.6 32.6 77.5 0.42 pH neutral 10 Completed Y 09-Feb-05 31-Aug-05 0.6 32.6 77.5 0.42 pH neutral 11 Completed Y 10-Feb-05 31-Aug-05 0.6 32.6 77.2 0.02 pH neutral 11 Completed Y 10-Feb-05 31-Aug-05 0.6 29.0 6.3 4.64 pH neutral 10 Completed TC silistone 22-Feb-05 </td <td>3124-0872-0887</td> <td>×</td> <td>10-Feb-05</td> <td>29-Jun-06</td> <td>1.4</td> <td>45.5</td> <td>44.4</td> <td></td> <td>pH neutral</td> <td>25</td> <td>Completed</td> <td>Stable leachate chemistry. Not expected to generate acid in short term</td>	3124-0872-0887	×	10-Feb-05	29-Jun-06	1.4	45.5	44.4		pH neutral	25	Completed	Stable leachate chemistry. Not expected to generate acid in short term
WY 08-Feb-05 30-Aug-05 0.6 0.4 12.5 0.04 5-pH-66 - Completed Y 08-Feb-05 30-Aug-06 0.6 26.5 68.4 0.39 pH neutral 24 Completed Y 08-Feb-05 31-Aug-06 0.6 30.9 92.5 0.33 pH neutral 10 Completed Y 09-Feb-05 31-Aug-06 0.6 30.9 92.5 0.33 pH neutral 11 Completed Y 09-Feb-05 31-Aug-06 0.6 32.6 77.5 0.42 pH neutral 11 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 10 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.0 PH < 5	Pre-Tertiary Volca	no-Sedimentary Rock										
Y OB-Feb-05 30-Aug-05 0.6 26.5 68.4 0.39 PH neutral 24 Completed WY OB-Feb-05 37-Aug-05 0.6 1.4 6.1 104.7 0.06 pH neutral 5 Completed Y O9-Feb-05 31-Aug-05 0.6 32.6 77.5 0.42 pH neutral 10 Completed Y O9-Feb-05 31-Aug-05 0.6 32.6 77.5 0.42 pH neutral 10 Completed Y O9-Feb-05 31-Aug-05 0.6 18.5 97.8 0.19 pH neutral 10 Completed Y O9-Feb-05 31-Aug-05 0.6 1.4 10.0 46.3 0.2 pH neutral 10 Completed Y 10-Feb-05 31-Aug-05 0.6 3.4 4.64 pH neutral 10 Completed Y 10-Feb-05 31-Aug-05 0.6 2.9 0.7 pH neutral 10 Completed <	019-0072-0090	WY	08-Feb-05	30-Aug-05	9.0	0.4	12.5	0.04	5 <ph<6< td=""><td>,</td><td>Completed</td><td>Stable leachate chemistry under acidic conditions</td></ph<6<>	,	Completed	Stable leachate chemistry under acidic conditions
WY 08-Feb-05 27-Jun-06 1.4 6.1 104.7 0.06 pH neutral 5 Completed Y 09-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 10 Completed Y 09-Feb-05 31-Aug-05 0.6 32.6 77.5 0.19 pH neutral 11 Completed Y 10-Feb-05 31-Aug-05 0.6 18.5 97.8 0.19 pH neutral 11 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 11 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 11 Completed Y 10-Feb-05 29-Jun-06 6.3 4.64 pH neutral 11 Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral 11 Completed TC silfstone	033-0137-0155	>	08-Feb-05	30-Aug-05	9.0	26.5	68.4		pH neutral	24	Completed	Stable leachate chemistry. Not expected to generate acid in short term
Y 09-Feb-05 31-Aug-05 0.6 30.9 92.5 0.33 pH neutral 10 Completed Y 09-Feb-05 31-Aug-05 0.6 32.6 77.5 0.42 pH neutral 15 Completed Y 09-Feb-05 31-Aug-05 0.6 1.4 10.0 46.3 0.22 pH neutral 11 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 10 Completed Y 10-Feb-05 31-Aug-05 0.6 29.0 6.3 4.64 pH neutral 10 Completed TC silfstone 22-Feb-05 30-Aug-05 0.6 29.0 6.3 4.64 pH neutral Completed TC ankvole (righer 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC ankvole (righer 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed	047-0350-0365	WY	08-Feb-05	27-Jun-06	1.4	6.1	104.7		pH neutral	S	Completed	Stable leachate chemistry. Not expected to generate acid in short term
WY 09-Feb-05 31-Aug-05 0.6 32.6 77.5 0.42 pH neutral 15 Completed Y 09-Feb-05 31-Aug-05 0.6 18.5 97.8 0.19 pH neutral 11 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 10 Completed Y 10-Feb-05 29-Jun-06 1.4 0.1 77.2 0.00 pH < 5	118-0520-0535	>	09-Feb-05	31-Aug-05	9.0	30.9	92.5		pH neutral	10	Completed	Stable leachate chemistry. Not expected to generate acid in short term
Y 09-Feb-05 31-Aug-05 0.6 18.5 97.8 0.19 pH neutral 11 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 10 Completed Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 10 Completed TC silfstone 22-Feb-05 31-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC andvose (higher 01-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC (andvol crug) 1	118-1220-1238	WY	09-Feb-05	31-Aug-05	9.0	32.6	77.5		pH neutral	15	Completed	Stable leachate chemistry. Not expected to generate acid in short term
Y 10-Feb-05 29-Jun-06 1.4 10.0 46.3 0.22 pH neutral 10 Completed Y 10-Feb-05 Ongoing 4.2 0.1 77.2 0.00 pH < 5	3102-0568-0588	>	09-Feb-05	31-Aug-05	9.0	18.5	87.8	H	pH neutral	1	Completed	Stable leachate chemistry. Not expected to generate acid in short term
Y 10-Feb-05 Ongoing 4.2 0.1 77.2 0.00 pH < 5 Continue TC silfstone 29-Feb-05 31-Aug-05 0.6 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed S) 10-Feb-05 Ongoing 4.2 4.14 9.4 4.41 pH neutral Completed S) 10-Feb-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral Completed TC 10-Feb-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral Complete TC 01-Nov-05 Ongoing 3.5 17.8 13.89 </td <td>3115-0988-1008</td> <td>></td> <td>10-Feb-05</td> <td>29-Jun-06</td> <td>1.4</td> <td>10.0</td> <td>46.3</td> <td></td> <td>pH neutral</td> <td>10</td> <td>Completed</td> <td>Stable leachate chemistry. Not expected to generate acid in short term</td>	3115-0988-1008	>	10-Feb-05	29-Jun-06	1.4	10.0	46.3		pH neutral	10	Completed	Stable leachate chemistry. Not expected to generate acid in short term
TC sillstone 22-Feb-05 31-Aug-05 0.6 29.0 6.3 4.64 pH neutral Completed TC sillstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC arkose (higher 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed S rep-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed S rep-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed S rep-05 Ongoing 4.2 4.14 9.4 4.41 pH neutral Completed TC (and/vol cng) 10-Feb-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral Completed TC 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral Complete TBd 10-Nov-05 Ongoing 3.5 1.3 4.86 pH neutral Com	3124-0188-0209	*	10-Feb-05	Ongoing	4.2	0.1	77.2	00.00	pH < 5		Continue	Will provide long-term data for this rock category
TC silfstone 09-Feb-05 31-Aug-05 0.6 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC arkose (higher 09-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed S TC arkose (higher 09-Feb-05 Ongoing 4.2 41.4 9.4 4.41 pH neutral Completed TC (and/vol cng) 10-Feb-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral Completed TC 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral Complete TBd 10-Feb-05 Ongoing 3.5 13.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing	Tertiary							To the second				
TC siltstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC siltstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC arkose (higher 09-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC and/vol cng) 10-Feb-05 29-Jun-06 1.4 83.8 3.1 26.80 pH neutral Completed TC (and/vol cng) 10-Feb-05 01-Sep-05 0.6 98.5 0.6 157.60 pH neutral Completed TC (and/vol cng) 10-Feb-05 01-Sep-05 0.6 98.5 0.6 157.60 pH neutral Completed TC 01-Nov-05 Ongoing 3.5 21.3 1.11 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 108.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2	115-0054-0066	TC siltstone	09-Feb-05	31-Aug-05	9.0	29.0	6.3	4.64	pH neutral		Completed	Decreasing trend shown. Sample 115-0142-0163 was continued as an example of same rock type
TC silfstone 22-Feb-05 30-Aug-05 0.5 29.0 6.3 4.64 pH neutral Completed TC and/vole right 09-Feb-05 Ongoing 4.2 41.4 9.4 4.41 pH neutral Completed TC (and/vol cng) 10-Feb-05 29-Jun-06 1.4 83.8 3.1 26.80 pH neutral Completed TC (and/vol cng) 10-Feb-05 01-Sep-05 0.6 98.5 0.6 157.60 pH neutral Completed TC 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral 6 Completed TG 01-Nov-05 Ongoing 3.5 83.7 75.3 1.11 pH neutral 6 Complete TBd 10-Feb-05 Ongoing 3.5 13.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing	115-0054-0066	TC siltstone	22-Feb-05	30-Aug-05	0.5	29.0	6.3	1338	pH neutral		Completed	Reproducibility shown
TC ankose (higher of peb-05) Ongoing 4.2 4.14 pH neutral pH neutral Complete TC (and/vol cng) 10-Feb-05 29-Jun-06 1.4 83.8 3.1 26.80 pH neutral Completed TC (and/vol cng) 10-Feb-05 01-Sep-05 0.6 98.5 0.6 157.60 pH neutral Completed TF 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral 6 Conpleted TG 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral 6 Conpleted TBd 10-Feb-05 Ongoing 3.5 13.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 <td>115-0054-0066</td> <td>TC siltstone</td> <td>22-Feb-05</td> <td>30-Aug-05</td> <td>0.5</td> <td>29.0</td> <td>6.3</td> <td></td> <td>pH neutral</td> <td></td> <td>Completed</td> <td>Reproducibility shown</td>	115-0054-0066	TC siltstone	22-Feb-05	30-Aug-05	0.5	29.0	6.3		pH neutral		Completed	Reproducibility shown
TČ (and/vol cng) 10-Feb-05 29-Jun-06 1.4 83.8 3.1 26.80 pH neutral Completed TC (and/vol cng) 10-Feb-05 01-Sep-05 0.6 98.5 0.6 157.60 pH neutral Completed TF 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral 6 Completed TG 01-Nov-05 Ongoing 3.5 83.7 75.3 1.11 pH neutral 6 Complete TBd (low S) 09-Feb-05 31-Aug-05 0.6 108.5 7.8 13.89 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing	115-0142-0163	TC arkose (higher S)	09-Feb-05	Ongoing	4.2	41.4	9.4	(22)	pH neutral		Complete	Stable leachate chemistry
TC (and/vol cng) 10-Feb-05 01-Sep-05 0.6 98.5 0.6 157.60 pH neutral Completed TF 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral 6 Continue TC 01-Nov-05 Ongoing 3.5 83.7 75.3 1.11 pH neutral Complete TBd 10-Feb-05 31-Aug-05 0.6 108.5 7.8 13.89 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral TO Complete	3129-0253-0272	TC (and/vol cng)	10-Feb-05	29-Jun-06	1.4	83.8	3.1	1.65	pH neutral		Completed	Stable leachate chemistry
TF 01-Nov-05 Ongoing 3.5 21.9 116.9 0.19 pH neutral 6 Continue TC 01-Nov-05 Ongoing 3.5 83.7 75.3 1.11 pH neutral 6 Complete TBd 10-Feb-05 31-Aug-05 0.6 108.5 7.8 13.89 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral Total nue	3129-0417-0435	TC (and/vol cng)	10-Feb-05	01-Sep-05	9.0	98.5	9.0	-	pH neutral		Completed	Release trends paralleled 3129-0253-0272 (same rock) which was continued a little longer.
TC 01-Nov-05 Ongoing 3.5 83.7 75.3 1.11 pH neutral Complete TBd (low S) 09-Feb-05 31-Aug-05 0.6 108.5 7.8 13.89 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral To Continue	4157 439-471	TF	01-Nov-05	Ongoing	3.5	21.9	116.9		pH neutral	9	Continue	Leachate chemistry not yet stable
TBd (low S) 09-Feb-05 31-Aug-05 0.6 108.5 7.8 13.89 pH neutral Completed TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral 11 Continue	4292 685-695	TC	01-Nov-05	Ongoing	3.5	83.7	75.3		pH neutral		Complete	Stable leachate chemistry
TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral 11 Continue	117-1055-1071	TBd (low S)	09-Feb-05	31-Aug-05	9.0	108.5	7.8		pH neutral		Completed	Similar results to sample 3102-0958-0978 on same rock type.
TBd 10-Feb-05 Ongoing 42 103.3 21.3 4.86 pH neutral Complete TBd 10-Feb-05 Ongoing 42 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral 11 Continue	3102-0958-0978	TBd	10-Feb-05	Ongoing	4.2	103.3	21.3		pH neutral		Complete	Stable leachate chemistry
TBd 10-Feb-05 Ongoing 4.2 103.3 21.3 4.86 pH neutral Complete TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral 11 Continue	3102-0958-0978	TBd	10-Feb-05	Ongoing	4.2	103.3	21.3		pH neutral		Complete	Reproducibility shown
TATD 01-Nov-05 Ongoing 3.5 17.2 27.2 0.63 pH neutral 11 Continue	3102-0958-0978	TBd	10-Feb-05	Ongoing	4.2	103.3	21.3	1772-0	pH neutral		Complete	Reproducibility shown
	4292 415-430	TA/TD	01-Nov-05	Ongoing	3.5	17.2	27.2		pH neutral	1	Continue	Leachate chemistry not yet stable

Onset of acid conditions is only expected in the case of those samples with NP/AP less than unity, i.e. there is insufficient NP to neutralize all the potential acid that might be generated in the sample. The timescale is calculated based on the observed rate at which NP is depleting in the sample concerned.

SOA 08671/5y 2009

Carbon Rook	Sample ID Rock Started Last Duration NP AP NP/AP Recent C Type data data PH	Rock	Started	Last data	Duration	Ā.	AP	NP/AP	Recent Leachate pH	Calculated Time to onset of acid conditions ⁽¹⁾	Status and Recommendation	Reasons for Previous Decision or Proposed Change
Confine Rock					Years	kg CaCO ₃ /t	kg CaCO ₃ /t			Years		
D 17-Jan-08 Ongoing 1.3 25.4 65.6 0.4 pH neutral 2.6 Confine GP 17-Jan-08 Ongoing 1.3 2.5.3 6.6.4 396 0.0 5c9H-66 - Confine GS 15-Jan-08 Ongoing 1.3 2.5 2.4.1 0.0 5c9H-66 - Confine GS 15-Jan-08 Ongoing 1.3 7.5 30 0.3 5c9H-66 - Confine GS 15-Jan-08 Ongoing 1.3 7.5 30 0.3 5c9H-66 - Confine Okario-Sedimentary Rock Graphing 1.3 7.4 386 0.0 pH+65 - Confine Okario-Sedimentary Rock Argental 1.3 7.4 386 0.0 pH+65 - Confine Okario-Sedimentary Rock Argental 1.3 7.4 386 0.0 pH+65 - Confine Y 15-Jan-08 Ongoing	re-Tertiary Plu	tonic Rock										
G 16. Inchange 1.3 2.5 24.1 0.1 5cpH-de - Complete Gp 17.3an-08 Ongoing 1.3 13.3 16.6 1.9 pH reutral 3.0 Complete - Complete Gs 15-Jan-08 Ongoing 1.3 7.5 30 0.3 5cpt-6 - Confine Gs 16-Jan-08 Ongoing 1.3 7.5 30 0.3 5cpt-6 - Confine Gs 16-Jan-08 Ongoing 1.3 7.4 305 0 pH-55 - Confine Joran-08 Congoing 1.3 7.4 305 0 pH-56 - Confine Joran-08 Congoing 1.3 7.4 305 0 pH-56 - Confine Joran-08 Congoing 1.3 7.4 305 0 Jack-6 - Confine Joran-08 Congoing 1.3 7.4 305 0 Jack-6 - Confine </td <td>24956</td> <td>D</td> <td>17-Jan-08</td> <td>Ongoing</td> <td>1.3</td> <td>25.4</td> <td>9.59</td> <td></td> <td>pH neutral</td> <td>26</td> <td>Continue</td> <td>Some release rates not yet stable; Mo decreasing</td>	24956	D	17-Jan-08	Ongoing	1.3	25.4	9.59		pH neutral	26	Continue	Some release rates not yet stable; Mo decreasing
Gas 17-Jan-08 Congoing 1.3 31.3 16.6 1.9 PH neutral 30 Complete	24182	g	16-Jan-08	Ongoing	1.3	2.5	24.1		5 <ph<6< td=""><td></td><td>Complete</td><td>Stable leachate chemistry under mildly acidic conditions</td></ph<6<>		Complete	Stable leachate chemistry under mildly acidic conditions
GS 15-Jan-08 Ongoing 1.3 6.4 396 0 pH+5 - Continue GS 15-Jan-08 Ongoing 1.3 7.5 30 0.3 5×pH+6 - Continue GS 16-Jan-08 Ongoing 1.3 2.3 233 0 pH+5 - Continue Y 15-Jan-08 Ongoing 1.3 2.3 233 0 pH+5 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+5 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+5 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+5 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 4.5 6.0 pH+5 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4	:6293	Gb	17-Jan-08	Ongoing	1.3	31.3	16.6		pH neutral	30	Complete	Release trends parallel Sample 224956. Test for Sample 224956 will continue.
GS 15-Jan-08 Ongoing 1.3 7.5 30 0.3 5-pH-66 - Confinue GS 16-Jan-08 Ongoing 1.3 1 452 0 pH+55 - Confinue Nocadimentary Rock 1.3 1.3 2.3 2.3 0.1 pH+55 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+55 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+55 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+55 - Confinue Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+55 - Confinue Y 17-Jan-08 Ongoing 1.3 1.4 305 0 pH+55 - Confinue Y 15-Jan-08 Ongoing 1.3 1.4 <	6692	Gs	15-Jan-08	Ongoing	1.3	6.4	398		pH<5		Continue	Leachate chemistry not yet stable
GS 16-Jan-08 Ongoing 1.3 1 452 0 pH<5 - Confinue GS 16-Jan-08 Ongoing 1.3 2.3 233 0 pH<5	5026	Gs	15-Jan-08	Ongoing	1.3	7.5	30		5 <ph<6< td=""><td></td><td>Continue</td><td>Leachate chemistry not yet stable</td></ph<6<>		Continue	Leachate chemistry not yet stable
GS 16-Jan-08 Ongoing 1.3 2.3 2.3 2.3 0 pH+55 .	5391	Gs	16-Jan-08	Ongoing	1.3	1	452		pH<5		Continue	Leachate chemistry not yet stable
Y 15-Jan-08 Ongoing 1.3 4.9 69.7 0.1 pH-55 - Continue Y 15-Jan-08 Ongoing 1.3 7.4 305 0.0 pH+55 - Complete Y 15-Jan-08 Ongoing 1.3 7.4 305 0.0 pH neutral 1.8 Complete YY 16-Jan-08 Ongoing 1.3 14.8 28.3 0.1 5cpH-c6 - Continue YZI 16-Jan-08 Ongoing 1.3 14.8 28.3 0.1 5cpH-c6 - Continue YZI 16-Jan-08 Ongoing 1.3 14.8 28.3 0.1 5cpH-c6 - Continue YZI 16-Jan-08 Ongoing 1.3 14.2 27.5 0.4 pH neutral 6 Continue TC 17-Jan-08 Ongoing 1.3 62.5 47.8 1.3 pH neutral 6 Continue TF 17-Jan-08 <t< td=""><td>5456</td><td>Gs</td><td>16-Jan-08</td><td>Ongoing</td><td>1.3</td><td>2.3</td><td>233</td><td></td><td>pH<5</td><td>1</td><td>Complete</td><td>Stable leachate chemistry under acidic conditions</td></t<>	5456	Gs	16-Jan-08	Ongoing	1.3	2.3	233		pH<5	1	Complete	Stable leachate chemistry under acidic conditions
Y 15-Jan-08 Ongoing 1.3 4.9 69.7 0.1 pH<55 - Complete Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH<55	e-Tertiary Vo	cano-Sedii	mentary Rock	1000								
Y 15-Jan-08 Ongoing 1.3 7.4 305 0 pH+65 - Complete Y 16-Jan-08 Ongoing 1.3 13.7 17.2 0.8 pH neutral 18 Complete Y2L 16-Jan-08 Ongoing 1.3 14.8 283 0.1 5cpH<6	0841 +	>	15-Jan-08	Ongoing	1.3	4.9	2.69		pH<5	·	Continue	Leachate chemistry not yet stable
Y 16-Jan-08 Ongoing 1.3 13.7 17.2 0.8 pH neutral 18 Complete YZL 16-Jan-08 Ongoing 1.3 5.8 37.5 0.2 pH neutral 7 Continue YZL 16-Jan-08 Ongoing 1.3 14.8 283 0.1 5pH<-6	3717	>	15-Jan-08	Ongoing	1.3	7.4	305		pH<5		Complete	Stable leachate chemistry under acidic conditions
Y (2)L 16-Jan-08 (Ongoing) 1.3 5.8 37.5 0.2 pH neutral pH+66 7 Continue TC 16-Jan-08 (Ongoing) 1.3 10.7 27.5 0.4 pH+55 - Confinue TC 17-Jan-08 (Ongoing) 1.3 10.7 27.5 0.4 pH neutral pH+55 - Complete TC 17-Jan-08 (Ongoing) 1.3 92.7 1.3 74.2 pH neutral pH+55 - Complete TF 17-Jan-08 (Ongoing) 1.3 36.6 3.8 9.8 pH neutral pH+55 Complete TF 17-Jan-08 (Ongoing) 1.3 70.4 7.5 9.4 pH neutral pH+55 Complete TY 17-Jan-08 (Ongoing) 1.3 34.6 7.7 1.1 pH neutral pH+55 - Complete TY 17-Jan-08 (Ongoing) 1.3 34.6 79.7 0.4 pH neutral Complete TA 16-Jan-08 (Ongoing) 1.3 34.6 79.7 0.4 pH neutral <t< td=""><td>7326</td><td>></td><td>16-Jan-08</td><td>Ongoing</td><td>1.3</td><td>13.7</td><td>17.2</td><td></td><td>pH neutral</td><td>18</td><td>Complete</td><td>Release trends parallel Sample 107172. Test for Sample 107172 will continue.</td></t<>	7326	>	16-Jan-08	Ongoing	1.3	13.7	17.2		pH neutral	18	Complete	Release trends parallel Sample 107172. Test for Sample 107172 will continue.
T/2L 16-Jan-08 Ongoing 1.3 14.8 283 0.1 5-pH-66 - Continue TC 15-Jan-08 Ongoing 1.3 10.7 27.5 0.4 pH+c5 - Complete TC 17-Jan-08 Ongoing 1.3 62.5 47.8 1.3 pH neutral 62 Complete TC 17-Jan-08 Ongoing 1.3 36.6 3.8 9.8 pH neutral Complete TF 17-Jan-08 Ongoing 1.3 36.6 3.8 9.8 pH neutral Complete TW 15-Jan-08 Ongoing 1.3 36.6 3.8 9.8 ph neutral Complete TY 15-Jan-08 Ongoing 1.3 36.6 3.8 9.8 ph neutral Complete TY 17-Jan-08 Ongoing 1.3 36.3 0.1 ph neutral Complete TY 17-Jan-08 Ongoing 1.3 34.6 79.7 0.4	172	>	17-Jan-08	Ongoing	1.3	5.8	37.5		pH neutral	7	Continue	Some release rates not yet stable; Mo decreasing
TC 15-Jan-08 Ongoing 1.3 10.7 27.5 0.4 pH<5 - Continue TC 17-Jan-08 Ongoing 1.3 62.5 47.8 1.3 pH neutral 62 Complete TC 17-Jan-08 Ongoing 1.3 92.7 1.3 74.2 pH neutral 62 Complete TF 16-Jan-08 Ongoing 1.3 36.6 3.8 9.8 pH neutral Complete TW 15-Jan-08 Ongoing 1.3 36.6 3.8 9.4 pH neutral Complete TY 15-Jan-08 Ongoing 1.3 51.5 4.7 11 pH neutral Complete TY 17-Jan-08 Ongoing 1.3 34.6 79.7 0.4 pH neutral Complete TY 15-Jan-08 Ongoing 1.3 34.6 79.7 0.4 pH neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 34.6	9200	Y2L	16-Jan-08	Ongoing	1.3	14.8	283		5 <ph<6< td=""><td></td><td>Continue</td><td>Leachate chemistry not yet stable</td></ph<6<>		Continue	Leachate chemistry not yet stable
TC 15-Jan-08 Ongoing 1.3 10.7 27.5 0.4 pH<5 - Complete TC 17-Jan-08 Ongoing 1.3 62.5 47.8 1.3 pH neutral 62 Complete TC 17-Jan-08 Ongoing 1.3 92.7 1.3 74.2 pH neutral Complete TF 16-Jan-08 Ongoing 1.3 36.6 3.8 9.8 pH neutral Complete TW 15-Jan-08 Ongoing 1.3 70.4 7.5 9.4 pH neutral Complete TY 15-Jan-08 Ongoing 1.3 60.8 4.1 15 pH neutral Complete TY 17-Jan-08 Ongoing 1.3 51.5 4.7 11 pH neutral Complete TY 17-Jan-08 Ongoing 1.3 34.6 79.7 0.4 pH neutral Complete TY 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4	tiary Rock											
TC 17-Jan-08 Ongoing 1.3 62.5 47.8 1.3 pH neutral 62 Complete TC 17-Jan-08 Ongoing 1.3 92.7 1.3 74.2 pH neutral Complete TF 17-Jan-08 Ongoing 1.3 36.6 3.8 9.8 pH neutral Complete TW 15-Jan-08 Ongoing 1.3 70.4 7.5 9.4 pH neutral Complete TY 15-Jan-08 Ongoing 1.3 60.8 4.1 1.5 pH neutral Complete TY 17-Jan-08 Ongoing 1.3 51.5 4.7 1.1 pH neutral Complete TY 17-Jan-08 Ongoing 1.3 34.6 79.7 0.4 pH neutral Complete TY 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4 pH neutral Complete TB 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4 p	1472	TC	15-Jan-08	Ongoing	1.3	10.7	27.5	0.4	pH<5	ī	Continue	Leachate pH is still decreasing and this sample has highest release rates for some metals
TC 17-Jan-08 Ongoing 1.3 92.7 1.3 74.2 pH neutral Complete TF 16-Jan-08 Ongoing 1.3 36.6 3.8 9.8 pH neutral Complete TW 15-Jan-08 Ongoing 1.3 70.4 7.5 9.4 pH neutral Complete TY 15-Jan-08 Ongoing 1.3 60.8 4.1 15 pH neutral Complete TY 15-Jan-08 Ongoing 1.3 60.8 4.7 11 pH neutral Complete TY 17-Jan-08 Ongoing 1.3 8.1 56.3 0.1 pH -5 - Complete TY 15-Jan-08 Ongoing 1.3 8.4 79.7 0.4 pH neutral Complete TY 20-Nov-08 Ongoing 1.3 83.3 53.8 1.5 pH neutral 66 Complete TD 20-Nov-08 Ongoing 1.3 14.9 0.9 14.9	3558	TC	17-Jan-08	Ongoing	1.3	62.5	47.8		pH neutral	62	Complete	Stable leachate chemistry
TF 16-Jan-08 Ongoing 1.3 85.1 ph neutral Complete TW 15-Jan-08 Ongoing 1.3 36.6 3.8 9.8 ph neutral Complete TW 15-Jan-08 Ongoing 1.3 70.4 7.5 9.4 ph neutral Complete TY 15-Jan-08 Ongoing 1.3 60.8 4.1 15 ph neutral Complete TY 17-Jan-08 Ongoing 1.3 8.1 56.3 0.1 ph neutral Complete TY 20-Nov-08 Ongoing 1.3 8.4 79.7 0.4 ph neutral Complete TA 16-Jan-08 Ongoing 1.3 83.3 53.8 1.5 ph neutral Gomplete TD 15-Jan-08 Ongoing 1.3 14.9 0.9 14.9 ph neutral Gomplete TD 20-Nov-08 Ongoing 1.3 14.9 0.9 14.9 ph neutral Complete	394	TC	17-Jan-08	Ongoing	1.3	92.7	1.3		pH neutral		Complete	Stable leachate chemistry
TF 17-Jan-08 Ongoing 1.3 36.6 3.8 9.8 ph neutral Complete TW 15-Jan-08 Ongoing 1.3 70.4 7.5 9.4 ph neutral Complete TY 15-Jan-08 Ongoing 1.3 60.8 4.1 15 ph neutral Complete TY 20-Nov-08 Ongoing 1.3 51.5 4.7 11 ph neutral Complete TY 20-Nov-08 Ongoing 1.3 34.6 79.7 0.4 ph neutral 33 Complete TA 16-Jan-08 Ongoing 1.3 83.3 53.8 1.5 ph neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 ph neutral 66 Complete TD 20-Nov-08 Ongoing 1.3 14.9 0.9 14.9 ph neutral 13 Complete TO 20-Nov-08 Ongoing 0.4 28.2	9084	TF	16-Jan-08	Ongoing	1.3	106.4	1.3		pH neutral		Complete	Stable leachate chemistry
TW 15-Jan-08 Ongoing 1.3 70.4 7.5 9.4 ph neutral Complete TY 15-Jan-08 Ongoing 1.3 60.8 4.1 15 ph neutral Complete TY 17-Jan-08 Ongoing 1.3 51.5 4.7 11 ph neutral Complete TY 20-Nov-08 Ongoing 0.4 8.1 56.3 0.1 ph neutral Complete TA 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4 ph neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 ph neutral 66 Complete TD 20-Nov-08 Ongoing 1.3 14 0.9 14.9 ph neutral 1 Complete TD 20-Nov-08 Ongoing 0.4 28.2 47.8 0.6 5-ph <-6	3502	TF	17-Jan-08	Ongoing	1.3	36.6	3.8		pH neutral		Complete	Stable leachate chemistry
TY 15-Jan-08 Ongoing 1.3 60.8 4.1 15 ph neutral Complete TY 17-Jan-08 Ongoing 1.3 51.5 4.7 11 ph neutral Complete TY 20-Nov-08 Ongoing 1.3 56.3 0.1 ph neutral - Complete TA 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4 ph neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 ph neutral 66 Complete TD 20-Nov-08 Ongoing 1.3 14 0.9 14.9 ph neutral 66 Complete TD 20-Nov-08 Ongoing 0.4 28.2 47.8 0.6 5-ph <-6	9135	M	15-Jan-08	Ongoing	1.3	70.4	7.5		pH neutral		Complete	Stable leachate chemistry
TY 17-Jan-08 Ongoing 1.3 51.5 4.7 11 ph neutral Complete TY 20-Nov-08 Ongoing 0.4 8.1 56.3 0.1 ph neutral - Complete TA 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4 ph neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 ph neutral 66 Complete TD 20-Nov-08 Ongoing 0.4 28.2 47.8 0.6 5-ph <-6	364	∠	15-Jan-08	Ongoing	1.3	8.09	4.1		pH neutral		Complete	Stable leachate chemistry
TY 20-Nov-08 Ongoing 0.4 8.1 56.3 0.1 pH<5 - Continue TAd 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4 pH neutral 33 Complete TB 16-Jan-08 Ongoing 1.3 83.3 53.8 1.5 pH neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 pH neutral Continue e 10-Nov-08 Ongoing 0.4 28.2 47.8 0.6 5-pH <-6	9189	∠	17-Jan-08	Ongoing	1.3	51.5	4.7		pH neutral		Complete	Stable leachate chemistry
TA d 16-Jan-08 Ongoing 1.3 34.6 79.7 0.4 pH neutral 33 Complete TB 16-Jan-08 Ongoing 1.3 83.3 53.8 1.5 pH neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 pH neutral Complete TD 20-Nov-08 Ongoing 0.4 28.2 47.8 0.6 55F - Continue	3366	∠	20-Nov-08	Ongoing	0.4	8.1	56.3	0.1	pH<5		Continue	Leachate chemistry not yet stable
TB 16-Jan-08 Ongoing 1.3 83.3 53.8 1.5 pH neutral 66 Complete TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 pH neutral Complete TD 20-Nov-08 Ongoing 0.4 28.2 47.8 0.6 5 <ph<6< td=""> - Continue F Ore 9-Apr-08 Ongoing 1.0 0.09 pH neutral 13 Continue</ph<6<>	2788	TAd	16-Jan-08	Ongoing	1.3	34.6	79.7		pH neutral	33	Complete	Stable leachate chemistry
TD 15-Jan-08 Ongoing 1.3 14 0.9 14.9 pH neutral Complete TD 20-Nov-08 Ongoing 0.4 28.2 47.8 0.6 5 <ph<6< td=""> - Continue e 9-Apr-08 Ongoing 1.0 0.09 pH neutral 13 Continue</ph<6<>	3785	TB	16-Jan-08	Ongoing	1.3	83.3	53.8		pH neutral	99	Complete	Stable leachate chemistry
TD 20-Nov-08 Ongoing 0.4 28.2 47.8 0.6 55Continue Ore 9-Apr-08 Ongoing 1.0 Ore 9-Apr-08 Ongoing 1.0	4775	TD	15-Jan-08	Ongoing	1.3	14	6.0		pH neutral		Complete	Stable leachate chemistry
Ore 9-Apr-08 Ongoing 1.0 0.09 pH neutral 13 Continue	1502	TD	20-Nov-08	Ongoing	6.0	28.2	47.8		5 <ph<6< td=""><td></td><td>Continue</td><td>Leachate chemistry not yet stable</td></ph<6<>		Continue	Leachate chemistry not yet stable
Ore 9-Apr-08 Ongoing 1.0 pH neutral 13 Continue	e Composite											
	11486-001 AT COMP - 10m	Ore	9-Apr-08	Ongoing	1.0				pH neutral	13	Continue	Only sample of this type being studied. Leachate chemistry not yet stable

COMP - 10m | comp or site | comp or site | comp or site | conficient NP (AP) less than unity, i.e. there is insufficient NP to neutralize all the potential acid that might be generated in the sample. The timescale is calculated based on the second timescale is calculated by the second timescale is calculated by the second timescale is calculated based on the second timescale is calculated based on the second timescale is calculated by the second

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Table 3: Characteristics and Status of Field Barrel Test Waste Rock Samples in Humidity Cell Tests

sample ID	Sample ID Rock Type		Started Last data Duration	Duration	ď	AP	NP/AP	Recent Leachate pH	Calculated Time to onset of acid conditions ^[1]	Status and Recommendation	Reasons for Previous Decision or Proposed Change
				Years	kg CaCO ₃ /t kg CaCO ₃ /t	kg CaCO ₃ /t			years		
ARLB003	G/D/N	18-Jan-08	Ongoing	1.3	28.90	183.44	0.16	pH neutral	12.40	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB006	G/D/N	18-Jan-08	Ongoing	1.3	21.30	100.00	0.21	pH neutral	11.72	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB001	>	18-Jan-08	Ongoing	1.3	6.50	198.44	0.03	pH<5		Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB002	>	18-Jan-08	Ongoing	1.3	6.20	189.06	0.03	pH<5		Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB007	TC/TF	18-Jan-08	Ongoing	1.3	90.20	22.19	4.07	pH neutral	58.01	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB008	TC/TF	18-Jan-08	Ongoing	1.3	70.10	6.56	10.68	pH neutral	72.24	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB004	WL	18-Jan-08	Ongoing	1.3	67.20	5.31	12.65	pH neutral	73.65	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB005	∠	18-Jan-08	Ongoing	1.3	63.40	15.00	4.23	pH neutral	27.57	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB009	TD	18-Jan-08	Ongoing	1.3	44.80	2.00	96.8	pH neutral	38.22	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data
ARLB010	TA+TB	18-Jan-08	Ongoing	1.3	48.10	1.56	30.78	pH neutral	58.19	Continue	To obtain long-term data for comparison with equivalent field (barrel) tests data

Onset of acid conditions is only expected in the case of those samples with NP/AP less than unity, i.e. there is insufficient NP to neutralize all the potential acid that might be generated in the sample. The timescale is calculated based on the observed rate at which NP is depleting in the sample concerned.

Table 4: Characteristics and Status of Waste Rock Samples in Subaqueous Columns

Sample ID R	Rock Type Zone	Zone	Started	Started Last data Duration	Duration	ď	ΑЬ	NP/AP	Recent Leachate pH	NP/AP Recent Leachate Calculated Time to pH onset of acid conditions (1)	Status and Recommendation	Reasons for Previous Decision or Proposed Change
					Years	kg CaCO ₃ /t kg CaCO ₃ /t	kg CaCO ₃ /t			Years		
3069-0927-0947 G		PWZ	PWZ 28-Sep-05	Ongoing	3.6	3.2	76.3	0.04	pH<5		Continue	Leachate chemistry not stable. Increasing As release rate over time
3102-0568-0588 Y		PWZ	PWZ 28-Sep-05	Ongoing	3.6	18.5	87.8	0.19	pH neutral	15.7	Complete	Stable leachate chemistry
3115-0988-1008 Y		PWZ 2	28-Sep-05	28-Jun-06	0.7	10.0	46.3	0.22	pH neutral	24.3	Completed	Stable leachate chemistry
3123-0438-0458 D		PWZ	PWZ 28-Sep-05 28-Jun-06	28-Jun-06	0.7	41.8	152.5	0.27	pH neutral	63.2	Completed	Stable leachate chemistry
3124-0188-0209 Y		PWZ	PWZ 28-Sep-05	Ongoing	3.6	0.1	77.2	00.00	pH<5	·	Complete	Stable leachate chemistry
3124-0872-0887 X		PWZ :	26-Oct-05	Ongoing	3.5	45.5	44.4	1.03	pH neutral	42.3	Complete	Stable leachate chemistry
Composite13 T	TC	PEZ '	10-Aug-08	Ongoing	0.7	80.7	6.3	12.91	pH neutral	483.0	Continue	Leachate chemistry not yet stable
Composite19 T.	TA	PEZ	PEZ 10-Aug-08 Ongoing	Ongoing	0.7	17.5	17.5	1.00	pH neutral	18.0	Continue	Leachate chemistry not yet stable

[1] Onset of acid conditions is only expected in the case of observed rate at which NP is depleting in the sample concerned.

Note: A further 12 PEZ samples are currently being stored under aerated, humid conditions ('stored bag' tests). The long term intention is for a subset of these 'weathered' samples to be studied in subaqueous columns.

Table 5: Characteristics and Status of Tailings Samples in Humidity Cell Tests and Columns

Sample ID	Tails Type	Zone	Started	Last data	Duration	Νb	AP	NP/AP	Recent Leachate	Calculated Time to onset of acid	Status and Recommendation	Reasons for Previous Decision or Proposed Change
					Years	k C	kg Coch		표	conditions"		
Humidity Cell Tests (2005 Tails Samples)	5 Tails Samples)	ı			ı							
S2-Scavenger Tails		PWZ	11-Feb-05	07-Oct- 05	0.7	24.4	5.3	4.6	pH neutral	12.7	Completed	Well defined stable or decreasing trends
S2-Bulk Cleaner Tails		PWZ	11-Feb-05	Ongoing	4.2	23.3	9.7	2.4	pH neutral	7.8	Complete	Well defined stable or decreasing trends
S1-Scavenger Tails		PWZ	11-Feb-05	07-Oct- 05	0.7	19.9	4.7	4.2	pH neutral	14.7	Completed	Well defined stable or decreasing trends
S1-Bulk Cleaner Tails		PWZ	11-Feb-05	Ongoing	4.2	19.6	6.9	2.9	pH neutral	6.6	Complete	Well defined stable or decreasing trends
Humidity Cell Tests (2008 Tails Samples)	3 Tails Samples)											
PP08-3365	Y - bulk tails	PEZ	23-Apr-08	Ongoing	1.0	4.6	9.9	7.0	pH neutral	0.0	Complete	Well defined stable or decreasing trends
PP08-3607	Y - bulk tails (cyclone slimes)	PEZ	23-Apr-08	Ongoing	1.0	5.7	4.7	1.2	pH neutral	0.1	Complete	Well defined stable or decreasing trends
PP08-3850	Y - bulk tails (cyclone sands)	PEZ	23-Apr-08	Ongoing	1.0	6.3	8.4	7.0	pH neutral	9.0	Continue	To obtain long term data for this tailings type
PP08-3614	G - bulk tails	PEZ	23-Apr-08	Ongoing	1.0	2.7	2.8	2.0	pH neutral	0.1	Complete	Well defined stable or decreasing trends
PP08-3610	G - bulk tails (cyclone slimes)	PEZ	23-Apr-08	Ongoing	1.0	6.3	1.6	4.0	pH neutral	0.4	Complete	Well defined stable or decreasing trends
PP08-3849	G - bulk tails (cyclone sands)	PEZ	23-Apr-08	Ongoing	1.0	6.2	3.1	2.0	pH neutral	0.5	Continue	To obtain long term data for this tailings type
11486-003 bulk	G+Y bulk tails	PEZ	22-Oct-08	Ongoing	0.5	7.2	3.4	2.1	pH neutral	1.1	Continue	Leachate chemistry not yet stable
11486-003 OF	80G+20Y - Cyclone O/F (slimes)	PEZ	22-Oct-08	Ongoing	0.5	8.3	3.4	2.4	pH neutral	1.1	Continue	Leachate chemistry not yet stable
11486-003 UF	80G+20Y - Cyclone U/F (sands)	PEZ	22-Oct-08	Ongoing	0.5	7.0	6.3	1.1	pH neutral	1.2	Continue	Leachate chemistry not yet stable
11840-003 bulk cleaner	H-Bulk Cleaner Tails	PWZ	13-Aug-08	Ongoing	0.7	17.7	23.4	9.0	pH neutral	4.8	Continue	Leachate chemistry not yet stable
11840-003 pyrite	H - Pyrite Rougher Tails	PWZ	10-Sep-08	Ongoing	9.0	23.0	38.8	9.0	pH neutral	1.1	Continue	Leachate chemistry not yet stable
11840-003 bulk float	H - Bulk Tails (Bulk Scavenger Tails) as is	PWZ	10-Sep-08	Ongoing	9.0	22.3	4.4	5.1	pH neutral	10.5	Continue	Leachate chemistry not yet stable
11840-003 Phase II sands	H - Bulk Tails (Bulk Scavenger Tails) Cyclone Sands	PWZ	10-Sep-08	Ongoing	9.0	21.1	7.8	2.7	pH neutral	8.9	Continue	Leachate chemistry not yet stable
11840-003 Phase II OF	H - Bulk Tails (Bulk Scavenger Tails) Cyclone Slimes	PWZ	10-Sep-08	Ongoing	9.0	25.2	2.8	9.0	pH neutral	10.5	Continue	Leachate chemistry not yet stable
Columns (2005 Tails Samples)	nples)											
S2-Scavenger Tails		PWZ	11-Feb-05	Ongoing	4.2	24.4	5.3	4.6	pH neutral	147.1	Continue	Mo release rate increasing.
S1-Scavenger Tails		PWZ	11-Feb-05	Ongoing	4.2	19.9	4.7	4.2	pH neutral	119.8	Complete	Well defined stable or decreasing trends

Onser of acid conditions is only expected in the case of those samples with NP/AP less than unity, i.e. there is insufficient NP to neutralize all the potential acid that might be generated in the sample. The timescale is calculated based on the observed rate at which NP is depleting in the sample concerned.

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Table 6: Proposed Changes to Monitoring Frequency for Ongoing Tests

Parameter Group	Early Stage Frequency	Ongoing Frequency
Leachate recovery	Weekly	Weekly
pH, ORP, Conductivity	Weekly	Every other week
Acidity, alkalinity, TDS, Hardness, Chloride, Fluoride, Sulphate	Every other week	Every fourth week
Element Scan	Every other week	Every fourth week

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